

Inventor of 3-Element Audion Tube Dies after Achieving Professional Renown

LEE DE FOREST (AM '04, M '07, F '18, Member for Life), a figure of momentous influence in the communications field, and inventor of the audion tube which led to the foundation of the radio industry and long-distance telephone communication, died June 30 at the age of 87.

He was granted a patent in 1907 for the tube which was intended to be an improvement on "space telegraphy." Later, the tubes made possible the development of radar, television, talking motion pictures, and other applications in electronics.

Dr. De Forest was the recipient of AIEE's 1946 Edison Medal Award. He was cited "for pioneering achievements in radio and for the invention of a grid-controlled vacuum tube with its profound technical and social consequences."

Born Aug. 26, 1873, in Council Bluffs, Iowa, he graduated from the mechanical engineers course of the Sheffield Scientific School at Yale University with the degree of Ph.B. in 1896. He took 3 years of post-graduate work in electricity, physics, and mathematics at Yale where he received a Ph.D. degree in 1899, with his thesis "Reflection of Hertzian Oscillations at Ends of Parallel Wires."

Dr. De Forest worked in the Telephone Laboratory of the Western Electric Company, Chicago, Ill., from 1899 to 1900, when he was also on the editorial staff of *Western Electrician* in Chicago.

He spent one year, 1900-01, in experiments on wireless telegraph receivers in the laboratories of the Armour Institute, Chicago, where he developed the electrolytic "responder."

In the summer of 1901, he built an apparatus operated by the Publishers Press Association in reporting the International Yacht Races.

Upon organization of the De Forest Wireless Company, he took charge of the development of the wireless telegraph system known by his name. In subsequent years, he installed wireless apparatus for the U. S. Signal Corps, the U. S. Army, and the U. S. Navy.

He conducted tests in 1903 between Wales and Ireland, and he equipped a dispatch boat for the *London Times* war correspondent reporting naval operations in the China Sea.

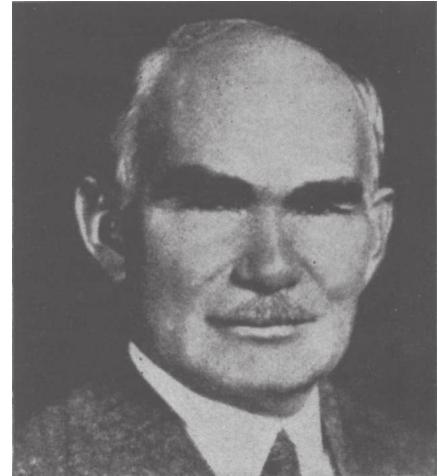
His system by which overland communication was established from St. Louis, Mo., to Chicago and Kansas City, Mo., was exhibited at the World's Fair in St. Louis. The system was awarded the Grand Prize and Gold Medal by the Commission of Awards and he was awarded a Gold Medal.

In 1906, Dr. De Forest inserted a zigzag piece of platinum wire between the filament and plate of a valve detector. He called it a "trigger" or "grid" and named the new 3-element tube the "Audion."

In 1912, he approached Western Electric engineers with his grid-controlled amplifier for the purpose of using it in long-distance lines, and particularly in

transcontinental services. Within 2 years, transcontinental telephone service was established.

The audion tube was developed further by the Radio Corporation of America in the field of radio communication and in the production of receiver-amplifier tubes, by the General Electric Company in giant power tube design, and by the Westinghouse Company in its application to industrial uses. The tube, with its manifold circuits, has produced the talking picture, the living reproduction of recorded music, and television.



Lee De Forest

B. R. Teare, Jr., Selected To Fill Term of R. B. Gear as Director-at-Large

B. R. TEARE, JR. (AM '29, F '42), dean of the College of Engineering and Science at the Carnegie Institute of Technology, has been named AIEE Director-at-Large to replace R. B. Gear who died recently. Dr. Teare will serve for the term ending July 31, 1961.

A native of Wisconsin, he was educated at the University of Wisconsin, where he received the B.S. and M.S. degrees in 1927 and 1928, respectively, and at Yale University where he completed his doctoral work in 1937.

In 1929, he joined the General Electric Company as a student electrical engineer and took the company's Advanced Course in Engineering.

Dr. Teare taught at Yale during 1933-39, and joined the Carnegie faculty in 1939 with responsibility for organizing a program of graduate study in electrical engineering. He was made head of the Department of Electrical Engineering in 1944, dean of Graduate Studies in 1950 and 2 years later assumed his present position as dean of the College of Engineering and Science.

He has done research on the subjects of hysteresis motors and copper-covered steel conductors at high frequencies, and has been active in a number of national projects in engineering education.

A Fellow in the Institute of Radio Engineers, he served as president of the American Society for Engineering Education in 1959-60 and was vice-president of the society during 1953-55.

Dr. Teare received the George Westinghouse Award for 1947 in recognition of his contributions to engineering education. Known for his pioneering work in the development and co-ordination of engineering courses, he is also a leader in the effort to design college programs which will give students competence in human and social as well as the technical fields.

A former AIEE District 2 vice-president (1957-59), Dr. Teare has served on the following AIEE Committees: Edison Medal (1951-56, 1959-64), Professional Development and Recognition Department (1956-61), Research (1960-61), Publication (1948-50), Technical Program (1948-50), Education (1941-60, chairman 1948-50), Professional Group (1948-49), Electrical Machinery (1937-42), and Communication (1934-36).

311 Persons Attend Cement Industry Conference

Registration of 311 persons was recorded at the 3rd AIEE Cement Industry Conference, sponsored by the Cement Industry Subcommittee of the AIEE General Industry Applications Committee and the Michigan Section, and held April 18-20 in Detroit, Mich.

The conference was represented in the Detroit area with several manufacturing and distribution plants. Four technical sessions included the presentation of 21 papers on maintenance and safety, automation, electric drives, and power distribution, as related to the cement industry.

A luncheon was held at which R. B. Martin, president of Dundee Cement, was the guest speaker. The banquet was



B. R. Teare, Jr.